

News (cont. from p. 771)

case a significant change in eruptive activity at Mt. Erebus.

"Mt. Erebus, the southernmost active volcano in the world, has contained a convecting lava lake since 1972. The semicircular lake increased in size, reaching about 60 m in length by 1976. Since then, little change in size has occurred. Activity associated with the lava lake has consisted of quiet degassing with emission of about 230 metric tons of SO₂ and 21 metric tons of aerosol particles per day. Two to six small strombolian eruptions occur per day, often ejecting bombs of orthoclase phonite onto the crater rim, about 220 m above the lava lake.

The reports indicate that starting on September 13, a number of large explosions were recorded by the International Mt. Erebus Seismic Study (IMESS) network situated on the volcano, by infrasound detectors in Windless Bight (about 20 km away), by the WSSN seismograph at Scott Base (97 km distant), and by a tidal gravimeter at South Pole station (about 1400 km from Mt. Erebus). Previous strombolian activity has generally been too weak to report except on the IMESS seismic stations.

From September 13 to 17 the volcano was very active, with 8–19 large explosions (recorded on WSSN, IMESS, and infrasound instruments) per day, decreasing to 2–8 per day during September 20–25, then increasing again to 12–27 explosions per day during September 26–29. Numerous mushroom-shaped clouds were reported and were estimated to rise as much as 2 km above the 3784-m-high volcano. Observers at McMurdo, 37 km SW of the volcano, reported hearing explosions on September 16 at 0459, and September 20 at 1133 and 1155. Slight earth tremors were also felt there. On September 17 at 1010, a bright summit glow was observed from McMurdo Sound. Six minutes later, incandescent bombs were ejected to about 600 m above the summit; observers at Butter Point, 70 km from the volcano, reported seeing incandescent tephra from this explosion, which produced one of the larger infrasonic and seismic signals of the eruption sequence.

"Ash covered the NW side of the volcano down to 3100 m elevation. Fumaroles around the summit crater showed a substantial increase in activity. A 300–500-m-high very narrow plume was observed lower on the E flank (1800 m). Observers suggested that it might have been a geyser."

Information Contacts: Philip R. Kyle, Coordinator, IMESS, Dept. of Geoscience, New Mexico Institute of Mining and Technology, Socorro, NM 87801; Jürgen Kienle and Charles Wilson, Geophysical Institute, University of Alaska, Fairbanks, AK 99701.

Mayon Volcano, Luzon Island, Philippines (13.26°N, 123.63°E). All times are local (= UT + 8 hours). The following, primarily from Olimpio Peña, supplements the preliminary report in last month's bulletin.

"Eruptive activity started September 9 at

Recent Ph.D.'s

Eos periodically lists information on recently accepted doctoral dissertations in the disciplines of geophysics. Faculty members are invited to submit the following information, on institution letterhead, above the signature of the faculty advisor or department chairman:

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Application Deadline, February 1, 1985

- Active Remote Sensing of Ocean Parameters, An Engineering Study**, J. D. Byrne, Optics, Dep. of Physics, Univ. of Miami, 1984.
- Aerol Sampling Bias From Differential Electrostatic Charge and Particle Size**, M. A. Jaycox, Atmos. Sci., Dep. of Phys., Drexel Univ., 1984.
- Analysis of Luminous and Younger Generations of Segments of the Big Bend Region, Texas**, A. R. Moustafa, Dep. of Geol., Univ. of Tex., Austin, 1983.
- Application of Stable Isotopes of Oxygen, Hydrogen, and Carbon to Hydrogeological Studies, With Special Reference to Canada Del Oro Valley and the Tucson Basin**, S.-L. Cheng, Dep. of Geochim., Univ. of Ariz., 1984.
- Applications of Teleseism to Shallow Earth Structure**, J. P. Stefanoff, Dep. of Geophys., Stanford Univ., 1984.
- Artur Haue: Meteorological Aspects of Long-Range Transport**, W. E. Raust, Atmos. Sci., Dep. of Phys., Univ. of Alas., 1983.
- Auroral Zone Thermospheric Dynamics Using Fehy-Prel Interferometer Measurements of the OI 13867 Å Emission**, R. J. Sica, Dep. of Space Phys. and Atmos. Sci., Univ. of Alas. (M. H. Rees), August 1984.
- Bore Inversion Applied to Reflection Seismology**, C.-Y. Lui, Dep. of Geophys., Univ. of Tulsa, 1984.
- Broker-Formation of the Pulsati Thrust Sheet Near Paultz, Virginia**, A. P. Schulz, Dep. of Geol., Va. Polytech. Inst. and State Univ., 1984.
- Characterization of Aquatic Use Attainment in Oklahoma**, Dep. of Phys., Univ. of Alas., 1983.

rose as much as 1.7 km above the summit and lava flowed 1 km from the crater.

"Mudflows generated by rain destroyed three sections of the Legazpi-Santo Domingo highway roughly 8 km SE of the volcano, so the small lava flows and initial pyroclastic flows (see below) moved predominantly NW."

"A fairly strong eruption September 10 at 2300 marked the start of volcanic activity. Ash-laden steam clouds rose 5 km above the 2462-m summit, and a pyroclastic flow moved down to the NW, reaching 700 m elevation. Stronger explosions on September 11 reopened the notch at the SW rim, so more of the later lava and pyroclastic flows moved SW than NW. The eruption continued to intensify, peaking September 13. Cauliflower-shaped ash-laden steam clouds accompanied by rumbling sounds reached a maximum height of 15 km before drifting SW, W, and NW. Continuous volcanic tremors were recorded, punctuated by explosion earthquakes. Two lava flows emerged through the SW breach. One reached 500 m elevation adjacent to W of the 1978 flow. The other, a little farther W, advanced to 1400 m elevation. The new lava is porphyritic augite-hypersthene andesite."

"Activity gradually declined September 14–21. A mild eruption on September 21 at 0502 was accompanied by a volcanic earthquake felt at intensity II on the Modified Modified-Richter Scale at the Mayon Reservoir Observatory, at 760 m altitude on the NW bank. A relatively quiet period followed. A very strong explosion September 23 at 0433 ejected voluminous ash-laden steam clouds that reached 10 km in height. Incandescent tephra rose 2 km above the summit and spread in all directions, covering the summit area with red-hot tephra to about 1500 m elevation. A large notch was formed in the SE rim of the crater and a smaller one in the E rim. Subsequent pyroclastic flows were directed predominantly SW and E, although some moved in other directions along gullies. Ash spread within about 50 km to the SW, W, and NW of the summit. Areas E and NE of the volcano received most of the fine airfall tephra generated by pyroclastic flows. The eruption continued to intensify until September 24.

Voluminous ash emission, sometimes sustained for 5 minutes, occurred at intervals of 2–15 minutes and was accompanied by strong detonations and at times by electrical discharges. Maximum height of the eruption clouds was 15 km. On September 24, at 1614, a nuee ardente reached the nearest village. A large volume of pyroclastic flow material was deposited on the SE flank. The eruption started to decline September 25. By October 5, activity was limited to weak steaming and faint to moderate crater glow, accompanied by volcanic tremors and discrete earthquakes. Press sources reported reinitiation of the eruption October 6. Ash-laden steam clouds

TABLE I. Number of Local Earthquakes per Month Recorded at Api Siapi

Month, 1984	Tectonic Earthquakes	Volcanic Earthquakes
January	62	18
May	82	57
June	204	159
July	136	85

Data courtesy of Adjut Sudradjat.

erated. On July 20, ash emission was accompanied by rumbling. The number of local seismic events increased through the first half of 1984 (see Table I). Volcanic tremors were recorded August 24, although no surface activity was seen. Ash emission occurred September 3 at 0417, producing an eruption column that rose 600 m. Glowing lava fragments were occasionally ejected. Rumbling accompanied the activity.

On September 5 at 0905, an ash column rose 4 km from the main crater. Nuees ardentes flowed 2 km to the south and 1 km to the west, with estimated volumes of 1.5 and 0.5×10^6 m³. One week later, ash emission was continuing and weak rumbling was heard. Ten volcanic and five tectonic earthquakes were recorded daily through September 16. About 4500 people were temporarily evacuated from the south and west sides of the danger zone but were allowed to work in their fields during the day. No casualties were reported.

Information Contacts: Adjut Sudradjat, Director, Volcanological Survey of Indonesia, Diponegoro 57, Bandung, Indonesia.

Meteoritic Events

Fireballs: SE, SW Australia; New Zealand; N Pacific Ocean (2500 km SW of Hawaii); S Florida, NW Georgia, central Kansas-Nebraska, W Nebraska, central Oklahoma, W Oregon-E Washington, E Texas, E Washington (2).

Earthquakes

Date	Time, UT	Magnitude	Latitude	Longitude	Depth of Focus	Region
Sept. 10	0514	6.7 M _s	40.49°N	126.78°W	10 km	off N California
Sept. 13	2349	6.2 M _s	55.76°N	137.48°E	5 km	Central Honshu, Japan
Sept. 17	0909	6.5 M _s	32.07°S	178.31°W	shallow	S of Kermadec Islands
Sept. 18	1326	5.4 M _s	40.47°N	42.08°E	111 km	E Turkey
Sept. 18	1703	6.8 M _s	34.00°N	141.44°E	shallow	off E coast of Honshu
Sept. 28	0004	6.9 M _s	25.76°S	176.18°W	shallow	S of Fiji Islands

Information Contact: National Earthquake Information Service, U.S. Geological Survey, Stop 967, Denver Federal Center, Box 25046, Denver, CO 80225.

Hot Trap, India: Magma Sources and Petrogenesis, J. J. Mahoney, Scripps Inst. of Oceanogr., Univ. of Calif., San Diego (J. D. Macdonald), June 1984.

Late Quaternary Glacial Cycles in the Bahamian Deep Basins and in the Adjacent Atlantic Ocean, A. W. Drury, Dep. of Geol., Univ. of Miami, 1984.

Local Climatological Investigation of Wind Fields in the Lower Monongahela Valley of Allegheny County, Pennsylvania, B. L. Bro, Dep. of Phys. and Atmos. Sci., Univ. of Pittsburgh, 1983.

Localized Stress Drops of Great Throat Earthquakes: Implications for Strong Ground Motion, J. J. Mori, Dep. of Geol. Sci., Columbia Univ. (P. Richards), July 1984.

A Paleogeographic Study of the Prince William Terrane and Nixon Fork Terrane, Alaska, P. W. Plumley, Dep. of Geol., Univ. of Calif., Santa Cruz, 1984.

Paleogeography and Tectonic Studies of the Scaglia Rosa Group Sediments of the Timis-Indus Salt Range, Northwestern Pakistan, M. J. Khan, Dep. of Geophys., Columbia Univ., 1983.

Measured and Calculated Solar Radiation in an Aerial Atmosphere, L. J. B. McArthur, Atmos. Sci., Dep. of Phys., McMaster Univ., 1984.

Microbial Involvement in Trace Organics Removal From Groundwater Recharge During Rapid Infiltration, S. R. Hincklin, Dep. of Environ. Sci., Rice Univ., 1984.

Precipitation-Acoustic Correlation in Ocean Sediments, S. W. Voon, Dep. of Phys. and Acoust., Univ. of Tex. at Austin, 1983.

Particulate Plumes in the Eastern Tropical Pacific Ocean: Sources and Proces, K. M. Fischer, Dep. of Geochim., Oreg. Univ., 1983.

The Petrology and Geochemistry of High Cascade Volcanoes in Southern Washington: Mount St. Helens Volcano and the Indian Heaven Fault Field, D. R. Smith, Dep. of Geol., Rice Univ. (W. P. Leeman), May 1984.

Neogene Paleogeography of the Equatorial and North Pacific Oceans, K. K. Romine, Dep. of Geol., Univ. of R. I., 1983.

Nitrate and Non-Sulfate Anions Across Over Major Regions of the World Ocean: Concentrations, Sources, and Fluxes, D. L. Savoie, Dep. of Chem., Univ. of Miami, 1984.

Nitrogen Cycling in Pelorus River Transition-Zone Shallow-Water Sediments, N. S. Simon, Dep. of Geochim., Amer. Univ., 1984.

Primate of Oreg Crystalline Xenoliths From the Eastern Snake River Plain, Idaho, D. J. Marty, Dep. of Geol., Rice Univ., 1984.

Physiological Effects of Simultaneous Exposure to Heat and Vibration, W. A. Spaul, Dep. of Environ. Sci., Univ. of Calif., Berkeley, 1983.

Quasi-Stationary Atmospheric Response to Large-Scale Forcing, I.-S. Kang, Atmos. Sci., Dep. of Phys., Oreg. State Univ., 1984.

Relationships Between Glass Coatings Characteristics and Landfill Thermal Slope Bands, W. J. Ripple, Dep. of Environ. Sci., Oreg. State Univ., 1984.

Paleoenvironmental Interpretation of the Upper Cretaceous, L. M. Stewart, Dep. of Geophys., Yale Univ., 1983.

A Study of Groundwater Effects Using Zeta, Age and Two-Dimensional Climate Models, H. N. Dallas, Atmos. Sci., Dep. of Phys., Rice Univ., 1984.

A Study of Highly Energetic Non-Bremsstrahlung from the Core of the Solar Flare, E. A. Kelley, Jr., Dep. of Phys. Oceanogr., Fla. State Univ., 1984.

Velocities of Shear Waves Along Oceanic Transform Faults, L. M. Stewart, Dep. of Geophys., Yale Univ., 1983.

A Study of Groundwater Effects Using Zeta, Age and Two-Dimensional Climate Models, H. N. Dallas, Atmos. Sci., Dep. of Phys., Rice Univ., 1984.

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Velocities of Shear Waves Along Oceanic Transform Faults, L. M. Stewart, Dep. of Geophys., Yale Univ., 1984.

Vertical Hole in a Rotating System: Geophysical Data and Submodel, V. S. Tripathi, Dep. of Geophys., Stanford Univ., 1984.

The Use of Photoacoustic and Other Detectors for Gas Chromatographic Determination of Gases in Pollution, W. Nutting, Dep. of Chem., Wash. State Univ., 1984.

Using the Global Positioning System (GPS) Phase Observables for Relative Gravity: Modeling, Processing, and Results, B. W. Remondi, Dep. of Aerosp., Univ. of Tex. at Austin (B. D. Tapley), May 1984.

Velocimetry Measurements in the Western and Central Equatorial Pacific, J. N. Moum, Dep. of Oceanogr., Univ. of B. C., Vancouver, May 1984.

Rain Acid Compounds in a Kraft Pulp and Paper Mill Effluent and Their Distribution in Bottom Sediments Near the Outfall, M. Unktulvapaul, Dep. of Environ. Sci., Coll. of William and Mary, 1984.

Retrieval of Thermal and Altimetric Variables in the Convective Storms, C. L. Ziegler, Dep. of Phys. and Atmos. Sci., Univ. of Okla., 1984.

A Paleogeographic Study of the Prince William Terrane and Nixon Fork Terrane, Alaska, P. W. Plumley, Dep. of Geol., Univ. of Calif., Santa Cruz, 1984.

Seismic Structure Across the Active Subduction Zone of Western Canada, G. D. Spence, Dep. of Geophys., Univ. of Calif., Santa Cruz (E. A. Silver), June 1984.

Shear Wave Velocity Structure in the Lithosphere in Central and Northern California, A. R. Levander, Dep

Books (cont. from p. 773)

ference on Advances in Infiltration. The stated purpose of the conference was to report and evaluate recent developments in the movement of water into soil. Ninety papers were presented at the conference, but only 36 manuscripts are included in this volume, which represents the proceedings for the conference. Six manuscripts each are presented under the designated topics of physics of infiltration, parameters in infiltration equations, special problems and phenomena, measurement of infiltration, applications in agriculture, and applications in watershed hydrology. Brief abstracts are included for 23 papers presented in poster sessions at the conference.

A 10-page summary of the proceedings is conveniently provided for those readers who obtain a quick overview and perspective for published contributions. The purpose of the summary is "...to select the key points or findings from the conference papers and to integrate this information into topical headings." These headings "represent but do not match" proceeding topics. Infiltration models were divided into basic equations of porous media flow (nine papers), physically based models (five papers), and empirical equations (four papers). The author of the summary concludes that a major strength of the proceedings is the extension of infiltration theory by a number of authors beyond overly simplified assumptions commonly associated with one-dimensional flow into homogeneous soil. More realistic cases are presented which account for multidimensional soil flow, preferential flow through macropores, air effects (multiphase flow), effects of surface sealing, soil-water hysteresis and redistribution during the postinfiltration period, effects of slowly permeable subsurface soil layers, and ice effects in frozen soils. Development of simplified models for conditions more complex than one-dimensional infiltration into homogeneous soil is a suggested need for future research. Another stated strength is the emphasis upon evaluation, spatial variability, and temporal variability of infiltration parameters. Particular attention was given to hydraulic properties of soil as well as to integral and empirical parameters. Improvement in parameter evaluation is also suggested as a major need for further research. A third stated strength is improvement in the measurement of infiltration in the field by use of the direct techniques of infiltration, furrow, and sprinkler infiltrometers and indirect techniques involving time domain reflectometry and passive microwaves. Additional improvement in accuracy and efficiency of infiltration measurement is listed as a research need.

The reviewer found two of the papers on multidimensional soil water flow especially interesting. Infiltration from irrigation furrows, trickle irrigation systems, subsurface disposal of effluent from septic tanks, and surface application of treated domestic wastewater by overhead sprinklers are but a few examples of situations in which only a fraction of a given soil receives water application, causing flow to occur in two and three dimensions. Using quasi-linearized forms for the multidimensional form of the Richards equation, two different authors presented analytical models for multidimensional infiltration. One author presented analytical models for two- and three-dimensional steady infiltration where water is applied to geometric patterns of "fractional wetting" of the soil surface. At "saturation" soil depths the need for these models, which describe the multidimensional aspects of water flow, was clearly shown. However, below some characteristic depth, water from all surface areas of water application cascades. At that point, simpler models for one-dimensional infiltration were shown to be adequate. The second author described a general analytical model for transient two-dimensional infiltration in which water is applied at specified intensity to the soil surface in strips separated by zones of evaporation. The model can be used for nonuniform and nonperiodic strip sources. The model is time-dependent and capable of providing valuable insight into the transient nature of two-dimensional flow from periodic strip sources with the simpler case of uniform infiltration and evaporation. Both of these papers provide important new concepts and mathematical tools for improving the understanding of infiltration physics for multidimensional flow.

This book is recommended as an excellent resource book for recent developments concerning water entry into soil.

Robert Massell is with the Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL 32611.

The Morphostructure of the Atlantic Ocean Floor: Its Development in the Meso-Cenozoic

V. M. Livin (transl. from the Russian by V. M. Divin, N. N. Proserko, and Yu. U. Rodzhabov), D. Reidel, Hingham, Mass., x + 172 pp., 1984.

Reviewed by Dennis E. Hayes

The Morphostructure of the Atlantic Ocean is a useful review of the principal morphologic, tectonic, sedimentary, and geophysical features of the Atlantic Ocean. The treatment of these topics is primarily a descriptive one based mostly upon data collected by Soviet scientists. The book is a recent translation of a 1980 edition published in Russia and as such suffers in two important ways: (1) The material and views presented take virtually no cognizance of research done since the mid-1970's and (2) the actual translation is often awkward (for example, platirina tectonics instead of plate tectonics; ocean bottom spreading instead of seafloor spreading; bathymetry instead of bathygeographic or, better still, morphology).

V. M. Livin is a scientist of international stature and his book provides a worthwhile if slightly dated descriptive summary of the morphology and evolution of the Atlantic Ocean floor. Although there are no new scientific insights presented in the book, the large collection of mostly Soviet references will be of interest to Atlantic Ocean researchers.

Dennis E. Hayes is with the Lamont-Doherty Geological Observatory, Palisades, N.Y. 10964.

Geophysical Monograph 28

MAGNETOSPHERIC CURRENTS (1984) T. A. Potemra, Editor

MAGNETOSPHERIC CURRENTS \$33 illustrations • hardbound • 375 pp.

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Harvard University/Petroleum Position in Petrology: The Department of Geological Sciences, Harvard University, invites applications for a faculty position in petrology. We are interested in persons concerned with the mineralogy and the major and/or minor elements in igneous and metamorphic rocks in relation to their geological and petrological setting. Experience with modern methods for the study of natural rocks, both in laboratory and in the field, is essential. The successful applicant must have the Ph.D. degree by the time of appointment and demonstrated capabilities to conduct original research and to teach both undergraduate and graduate students. The appointment will be made as an Assistant or Associate Professor depending on qualifications and experience. The 1984/85 salary ranges are \$26,601—\$38,200 for Assistant Professor and \$30,601—\$39,800 for Associate Professor. Applications are made for an initial term of up to five years. Interested applicants should send via, bibliography, and names of three references to: Professor M. J. Dworakowski, Harvard University, 29 Oxford Street, Cambridge, MA 02138.

Montana Bureau of Mines & Geology/Mt. St. Helens Tech: Applications are invited for a non-tenure track academic position in environmental hydrogeology to be filled at the research instructor or research assistant professor level.

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The closing date for applications is November 12, 1984. Salary will be \$26,000—\$35,000/year depending upon education and experience.

Applications will require name and phone number of three references along with: Director, Montana Bureau of Mines and Geology, Montana College of Mineral Science and Technology, Butte, MT 89701.

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Department of Geosciences/University of Houston: The Department of Geosciences has permission to hire at least one geophysicist to complement the 16 members of our faculty (3 in Geophysics). This is a tenure track position with a starting date of August, 1985. We are particularly interested in talking with individuals having strong backgrounds in theoretical and experimental seismology. Salary and rank will be determined on an individual basis. Applications should submit: (1) a curriculum vita; (2) a brief statement outlining research interests; (3) a brief statement outlining teaching interests; (4) three letters of recommendation; (5) a copy of graduate transcript.

John C. Butler
Geosciences
University of Houston, University Park
Houston, Texas 77040.

Several of my colleagues and I will be at the GSA meetings in Reno and would like to talk with potential applicants.

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Faculty Positions in Structural Geology/Tectonics: The Department of Marine, Earth and Atmospheric Sciences, North Carolina State University, has a tenure track opening at the Assistant or Associate Professor level in the area of structural geology/tectonics. The position will be filled for the beginning Fall 1985 term. The department currently has 31 full-time faculty, including 12

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Please send complete resume and the names of at least three references to: V.V. Cavosie, Search Committee Chairman, Department of MEAS, North Carolina State University, Raleigh, NC 27695-8208; phone (919) 757-2212. Applications will be considered as received, with a closing date of January 15, 1985.

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Send resume, including biographical data, grade transcripts, teaching experience, research interests, publications, and three references to Constantine Papadakis, Head, Civil Engineering Department, Colorado State University, Fort Collins, Colorado 80523.

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Sedimentologist-Oceanographer/Texas A&M University: Scientific visitor appointments are available for a tenure-track faculty position in the general field of marine sedimentology. The position will involve graduate level teaching and supervision of graduate student research. The successful applicant will have demonstrated publications, the names of three scientist familiar with their work, and a statement of their research plan. Applications must be received by December 1, 1984.

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High Altitude Observatory Scientific Visitor Program/NASA: Scientific visitor appointments are available for a tenure-track faculty position in the field of marine sedimentology. The position will involve graduate level teaching and supervision of graduate student research. The successful applicant will have demonstrated publications, the names of three scientist familiar with their work, and a statement of their research plan. Applications must be received by December 1, 1984.

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Civil Engineering: The University of Notre Dame is seeking applications for a tenure-track Assistant or Associate Professor position in its Department of Civil Engineering. Applicants should have attained Ph.D. in Civil Engineering or an equivalent degree in a related discipline, and a record of research and teaching. The successful applicant will have demonstrated publications, the names of three scientist familiar with their work, and a statement of their research plan. Applications must be received by December 1, 1984.

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Graduate Assistantships in Physics, Space Physics and Atmospheric Sciences: Assistantships are available for graduate students seeking M.S. and Ph.D. degrees in Physics, Space Physics and Atmospheric Sciences, or Physics in the University of Wyoming. Curriculum vitae, publications and the names of three or more references should be sent by December 1, 1984 to Karl J. Tuomi, Chairperson, Department of Geophysics and Geodynamics, Yale University, Box 1666, New Haven, CT 06511.

Yale University is an equal opportunity/affirmative action employer.

Petroleum Geologist/Naval Postgraduate School: The Ocean Tides Institute has available a postdoctoral position for a person interested in the analysis and interpretation of ocean tides. The tenure is for one or two years. The successful candidate should have a Ph.D. in physical oceanography and although not required, a background in hydrodynamics, sedimentology, and/or geochemistry.

The successful candidate will strengthen the Department in at least one of the following areas: water quality, hydrodynamics, sedimentary chemistry, soil mechanics, groundwater hydrology, and/or structural analysis. Applications will begin in Fall 1985. Send resume and letter of application to Dr. Robert O. Keil, Director, Ocean Tides Institute, Naval Postgraduate School, Monterey, CA 93733.

Yale University is an equal opportunity/affirmative action employer.

Postdoctoral Position/Naval Postgraduate School: The Ocean Tides Institute has available a postdoctoral position for a person interested in the analysis and interpretation of ocean tides. The tenure is for one or two years. The successful candidate should have a Ph.D. in physical oceanography and although not required, a background in hydrodynamics, sedimentology, and/or geochemistry.

The successful candidate will strengthen the Department in at least one of the following areas: water quality, hydrodynamics, sedimentary chemistry, soil mechanics, groundwater hydrology, and/or structural analysis. Applications will begin in Fall 1985. Send resume and letter of application to Dr. Robert O. Keil, Director, Ocean Tides Institute, Naval Postgraduate School, Monterey, CA 93733.

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Geochronologist/University of California, Davis: The University of California, Davis has available a permanent, tenure-track position for a geochronologist in the area of igneous and metamorphic geochronology and/or the geochemistry of economic deposits. Duties will include teaching undergraduate and graduate courses, research, and supervision of graduate students. The successful candidate will have a Ph.D. in geochronology and/or geochemistry, and a demonstrated ability for quality teaching at the graduate and undergraduate levels, and a demonstrated ability for quality research at the graduate and undergraduate levels.

Applicants should complete via, a statement of research interests and a statement of three references. Deadline for application is January 15, 1985. Inquiries and applications should be directed to: Dr. Howard D. Day, Department of Geology, University of California, Davis, CA 95816.

The University of California is an equal opportunity/affirmative action employer.

Research Associate/University of Maryland: The Space Physics Group of the Department of Physics and Astronomy has an opening for a Research Associate for an initial one-year period with high likelihood of extension. The position involves research on energetic particles of solar and interplanetary origin. Applicants should possess a Ph.D. in a relevant area of physics or astrophysics; relevant research experience in the area of space plasma physics. Application should be addressed to Prof. Clem M. Mason, Department of Physics and Astronomy, University of Maryland, College Park, MD 20742. Applications should send a vita including complete bibliography and a description of research experience, and should arrange for the sending of at least three letters of reference.

The University of Maryland is an equal opportunity/affirmative action employer.

College of Geosciences/University of Oklahoma: Applications and nominations are invited for the position of Director of the School of Geology and Geophysics. The Director is expected to have a Ph.D. or equivalent, a strong, ongoing research program and administrative experience; indication of potential for teaching geoscience courses; ability to supervise a graduate program; ability to manage financial resources; ability to make technical presentations, both orally and in writing; and ability to implement an effective Affirmative Action (EO) program. Applicants are asked to describe their experience in each of the above seven factors. These responses should be included as attachments to the basic application form. The salary ranges from \$50,495 to \$65,642 per year. This position is in the Federal Competitive Service; however, persons with no previous Federal service may apply. Applicants should refer to announcement number PMEL/WASC 84-292 (PM) when submitting applications (SF-171, "Personal Qualifications Statement") available at most Federal agencies) to:

Manager, Research Computer Facility. The University of Oklahoma is looking for a person to manage and coordinate research in these two areas beginning April 1, 1985. The appointment will be for a tenure track position. Hardware and Software are designed for image processing, scientific data processing, and graphical display of geological, geographical and geochemical data.

Meetings (cont. from p. 777)

In Agricultural Research Organization, the Center for Agricultural Research on the Environment and Tropics, (Secretaria do 1º Simpósio do Trópico Úmido, Centro de Pesquisas Agropecuária do Trópico Úmido/CPTA), Caixa Postal 48, 66000-Belém, Pará-Brasil; tel.: Nov. 12-16, 1984. Seminar on Pollution Control, South Africa, Seminar NWPA, Water Quality Assoc., of Southern Africa, (Lucid M. Nielsen, Conference Coordinator, NWPA, 500 W. Wilson Rd., Washington, OH 43085; tel.: 614-846-0355); (Dec. 13, 1983).

Nov. 13-15, Conference on Water Reuse and Desalination, Johannesburg, South Africa. Sponsor: American Water Resources Association, (Ferdinand Quinones, U.S. Geological Survey, WRD, GPO Box 4494, San Juan, PR 00956; tel.: 787-785-4660); (Oct. 18, 1984).

Nov. 13-14, Symposium on Geophysics in Kansas—A 25-Year Update, Wichita, Kan. Sponsors: Kansas Geological Survey, University of Kansas, (Conferences and Special Programs, Building, Lawrence, KS 66045-2607); (Oct. 18, 1984).

Nov. 13-15, Optishes Through Time, Nancy, France, (Jacqueline Dejina, Université de Nancy I, Faculté des Sciences, Laboratoire de Pétrologie, O.P. No. 229, F-54500 Vandœuvre-lès-Nancy, Centre France); (June 23, 1983).

Nov. 13-15, 1984 International Symposium on Antennas, (Journées Internationales de Nice sur les Antennes—JINA), Nice, France. Organizers: France's Centre National d'Etudes des Télécommunications (CNET), Société des Électriciens, des Électroniques et des Radios, (Secrétariat JINA '84, CNET-PAB, 100 Avenue du Général de Gaulle Cap d'Antibes, France); (Aug. 14, 1984).

Nov. 13-15, Coastal Zone and Continental Shelf Conf., Resolution, Cambridge, Mass. Sponsors: Massachusetts Institute of Technology, Sea Grant Program; (Elizabeth T. Hartung, MIT Sea Grant Program, 77 Massachusetts Ave., Rm. 101, Cambridge, MA 02139; tel.: 617-455-2020); (Cap It All!, Oct. 18, 1984).

Nov. 13-15, 1984 World Mining Congress, New Delhi, India. Sponsor: The Institution of Engineers (India), (The Institution of Engineers (India), SDI State Center, 11, Shanti Vihar 110012, New Delhi, India).

Nov. 20-22, 7th International Symposium on Deterioration, Treatment, Materials, Canada. Organizers: Deterioration, Treatment, Materials Québec, (Assainissement des eaux, Association Québecoise des techniques des eaux, (Alain Jolinette), Environment Canada; tel.: 819-997-3400; tel. Claude Vergez, L'AQTEQ/Sonexaq, AQTF, Representatives; tel.: SH-356-S023); (Oct. 16, 1984).

Nov. 20-22, VII Technical Conference on Urban Climatology and its Applications With Special Reference to Tropical Areas, Mexico City, Spain; (WMO, World Health Organization, IT, R. Uke, c/o World Climate Program Dept., WMO, 11, Giuseppe Mazzini, Casapone Nu. S. CH-1211 Geneva 21, Switzerland); (June 12, 1984).

Nov. 20-22, Symposium on the Scientific Basis for Nuclear Waste Management, Boston, Mass. Sponsor: Materials Research Society, (John Stone, E. J. du Pont de Nemours and Co., Savannah River Laboratory, Aiken, SC 29808); (May 8, 1984).

Nov. 27-30, Thirteenth Annual Conference on Magnetism and Magnetic Materials, San Diego, Calif. Sponsor: American Physical Society, Physics Society of Institute of Electrical and Electronics Engineers, (John Scott, American Institute of Physics, 352 East 51st St., New York, NY 10017); (June 8, 1984).

Nov. 30-Dec. 1, NASA/Lunar and Planetary Institute Workshop on Water and Mars (planetary geology, climatology, and dynamics of its climate and atmosphere). Moffett Field, Calif./NASA/LPI Project Office, 3303 NASA Road 1, Houston, TX 77058; (Sept. 4, 1984).

Dec. 5-7, AGU Fall Meeting, San Francisco, Calif. (Meetings, AGU, 2000 Florida Ave., N.W., Washington, DC 20009).

Dec. 16-21, International Chemical Geodesy of Pacific Basin Seismics, Honolulu, Hawaii. Organizers: International Council of Chemical Societies of Japan, (PACCHM '84, ACS, Meetings and Divisional Activities Dept., 1515 16th St., N.W., Washington, DC 20036; tel.: 202-672-4306; PACCHM '84, Chemical Institute of Canada, 151 St. Andrews St., Suite 906, Ottawa, Ontario K1P 5H3, Canada; tel.: 613-235-5623; PACCHM '84, Chemical Society of Japan, 1-12, Minami-Aoyama, Minato-ku, Tokyo, 107, Japan; tel.: 03-392-0161); (Sept. 13, 1983).

Dec. 17-21, Tectonic Studies Group 15th Annual General Meeting, Swansea, U.K. Sponsor: University College of Swansea, (Richard Lyle, Dept. of Geology, University College, Swansea, Wales SA2 8PP, United Kingdom).

Dec. 26-31, Fourth International Conference on Applied Numerical Modeling, Taiwan, Taiwan, (S. Y. Wang, School of Engineering, Univ. of Mississippi, University, MS 38677; tel.: 601-232-7210).

1985

Jan. 7-12, 17th International Congress on Hydrogeology, Results of Low Permeability, Tucson, Ariz. Sponsors: International Assoc. of Hydrogeologists, AGU, (E. S. Sinson, Dept. of Hydrology and Water Resources, College of Engineering, Univ. of Arizona, Tucson, AZ 85721).

Jan. 7-11, International Conference on Information and Processing Systems for Meteorology, Oceanography, and Hydrology, Los Angeles, Calif. Sponsor: AMS, (C. Stanley Doore, Office of the Federal Coordinator, 11490 Rockville Pike, Suite 300, Rockville, MD 20852); tel.: 301-438-8714); (Aug. 14, 1984).

Feb. 4-6, International Symposium on Recent Crustal Movements, Montevideo, Venezuela. Sponsor: IAO, (Instituto Hidrocarburos, Av. 6 Mariscal, Venezuela; tel.: 01285-CARME-V).

Feb. 4-6, National Conference on Water Resources Research, Chia-Yi, Chiayi, Mil. Sponsor: University Council on Water Resources, (William L. Powers, Executive Secretary, 101 Lakeside, Columbus, OH 43260); tel.: 614-872-0714); (tel.: 403-479-3905).

Feb. 6-7, USGS Forum on Research in Mineral Resources, Denver, Colo. (William R. Miller, USGS, P.O. Box 25046, Mail Stop 912, Denver Federal Center, Denver, CO 80225; tel.: 303-230-6558).

Feb. 12-15, Australian Physical Geodynamics Conference, Hobart, Tasmania. Convenor: Eric J. Lindstrom, CSIRO Marine Laboratories, GPO Box 1588, Hobart, Tasmania, Australia 7001; (Sept. 4, 1984).

Feb. 12-15, Chapman Conference on Solar Wind-Magnetosphere Coupling, Pasadena, Calif. (AGU, 2000 Florida Ave., N.W., Washington, DC 20009).

Meetings Chairman**for 1986-88**

Frank Eden will complete his term as Meetings Chairman in December 1985.

A Selection Committee will recommend a candidate for Meetings Chairman to President Charles L. Drake for appointment. Resumes of those interested in serving as Meetings Chairman or letters of recommendations from those who wish to suggest candidates, should be sent to Meetings Chairman Selection Committee, AGU, 2000 Florida Avenue, N.W., Washington, D.C. 20009, by March 1, 1985.

The two national AGU meetings are attended by more of the active research community than any other in the field and are regarded as the premier geophysical meetings. The Meetings Chairman is charged with the responsibility for the planning and development of the Spring and Fall Meetings. He/she directs the meeting of the Section Program Chairmen, arranges for the Union Frontiers Sessions, or other special Union sessions, and has final authority over the arrangement by Section Program Chairmen of papers and sessions. The position takes approximately 10% of an individual's time over the course of a year. In addition to attendance at the meetings, an honorarium of \$2500 per year and an expense allowance is included for each year of the three-year term.

and Photogrammetric, HPV G-55, ETH-Hönggerberg, 8003 Zürich, Switzerland.)

May 27-June 1, Fifth International Coral Reef Congress, Tahiti, French Polynesia. (Organizing Committee, Coral Reef Congress, B.P. 562 Papete, Tahiti, French Polynesia.)

Summer Colloquium on Comparative Study of Magnetotelluric Systems, France, (Dominique Le Gall and Bertrand Pedersen, DASSOP, Observatoire de Meudon, F-92195 Meudon Principal Cedex, France); (Tel.: 01-305-4529).

July 29-Aug. 9, Tsumeb GS: International Tsumeb Symposium on the UG-1 Tsumeb Commodity, Victoria, Canada; (Tsumeb GS, B.P. 2307, Sidney, B.C., Canada); (July 31, 1985).

Sept. 10-13, Envirofron '86, Washington, D.C. Organizers: NOAA (Program Committee, Envirofron '86, Mail Stop 0482, Washington, DC 20233).

Sept. 15-18, 1985 International Conference on Petroleum Measurements, Zurich, Switzerland. Organizers: Swiss Federal Institute of Technology, International Association of Hydrological Sciences, World Meteorological Organization, (Rosi Sverdrup, Hydrology Section, Department of Geography, Univ. of Wisconsin, Milwaukee, WI 53201); tel.: 414-223-2704; (Aug. 19, 1984).

April 1-2, Workshop on the Correction of Preliminary Measurements, Zurich. Organizers: Swiss Federal Institute of Technology, International Association of Hydrological Sciences, World Meteorological Organization, (Rosi Sverdrup, Hydrology Section, Department of Geography, Univ. of Wisconsin, Milwaukee, WI 53201); tel.: 414-223-2704; (Aug. 19, 1984).

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Nov. 27-30, Thirteenth Annual Conference on Magnetism and Magnetic Materials, San Diego, Calif. Sponsor: The Institution of Engineers (India), (The Institution of Engineers (India), SDI State Center, 11, Shanti Vihar 110012, New Delhi, India).

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Feb. 4-6, National Conference on Water Resources Research, Chia-Yi, Chiayi, Mil. Sponsor: University Council on Water Resources, (William L. Powers, Executive Secretary, 101 Lakeside, Columbus, OH 43260); tel.: 614-872-0714); (tel.: 403-479-3905).

Feb. 12-15, Chapman Conference on Solar Wind-Magnetosphere Coupling, Pasadena, Calif. (AGU, 2000 Florida Ave., N.W., Washington, DC 20009).

March 11-15, 10th Lunar and Planetary Science Conference, Houston, Tex. Sponsors: Lunar and Planetary Institute, AGU, NASA Johnson Space Center, Division for Planetary Sciences of the American Astronomical Society, CSA, Meteoritical Society, (Pamela Jones, Lunar and Planetary Institute, 3600 Bay Area Blvd., Houston, TX 77058); tel.: 713-467-2560.

April 1-2, Workshop on the Correction of Preliminary Measurements, Zurich. Organizers: Swiss Federal Institute of Technology, International Association of Hydrological Sciences, World Meteorological Organization, (Rosi Sverdrup, Hydrology Section, Department of Geography, Univ. of Wisconsin, Milwaukee, WI 53201); tel.: 414-223-2704; (Aug. 19, 1984).

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